



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,013	04/17/2006	Ulrich Klebe	40331001	8812
<div>465 7590 07/01/2008</div> <div>YOUNG & THOMPSON 209 Madison Street Suite 500 ALEXANDRIA, VA 22314</div>				
EXAMINER				
NIESZ, JASON KAROL				
ART UNIT		PAPER NUMBER		
3751				
MAIL DATE		DELIVERY MODE		
07/01/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,013

Applicant(s)

KLEBE ET AL.

Examiner

JASON K. NIESZ

Art Unit

3751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9-17,19,20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-17,19,20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-083)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-7, 9-17, 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kesten et al. (DE 10107895 A1) in view of Bastian (US Patent 5,900,538) .

Another patent in the same family as Kesten entered the US national stage as application 10/471,926, and published as US 2008/0016884 on June 6, 2007. This application will be used as a translation of Kesten. References to Kesten will refer to the US application unless otherwise stated.

In Re claims 1 and 22 Kesten discloses a method for high-pressure filling of a pressure vessel with a gas or gas mixture (Page 1, paragraph 2) in which the pressure vessel is cooled and filled (Page 1, paragraph 9) with at least one gas at a temperature above the boiling temperature of the gas (Page 1, paragraph 2). Kesten also discloses closing the vessel in the cooled state and producing pressure in the filled and closed pressure vessel by warming (Page 1, paragraph 9). Kesten also discloses an internal tank pressure of 1000 to 1200 bar.

Kesten doesn't disclose the monitoring of a filling quantity manometrically.

Bastian discloses manometric measurement of pressure. Because the gas suggested in the Kesten method (hydrogen) is above its boiling point for the entirety of the filling operation, a pressure measurement can be used to calculate quantity. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use manometric measurement to determine fill quantity, in order to prevent overfill of the pressure vessel.

Statements of intended use have been considered and determined not to limit the scope of the claim beyond the prior art: the Kesten in view of Bastian method could be used to fill an airbag gas generator.

In Re claim 3 Kesten discloses the pressure tank warming up to the ambient temperature (Page 2, paragraph 27).

In Re claim 4 Kesten discloses the use of hydrogen as the fill gas (Page 2, paragraph 22). The examiner notes that the boiling temperature of hydrogen at STP is approximately -253 C.

In Re claim 5 Kesten discloses the use of liquid nitrogen at -196 C to cool the pressure vessel (Page 1, paragraph 11).

In Re claim 6 Kesten discloses the use of liquid nitrogen at -196 C to cool the pressure vessel (Page 1, paragraph 11). Kesten further discloses the use of a liquid nitrogen heat exchanger to cool the fill gas to 196 C (Page 2, paragraph 27). The examiner notes that the filling would take place at a constant temperature because the fill gas and the pressure vessel are both cooled to the same temperature.

In Re claim 7 with reference to Figure 1 Kesten discloses a cooling bath (2) for use in cooling the pressure vessel during the filling process (Page 2, Paragraph 23)

In Re claims 9 and 10 with reference to Figure 1 Kesten discloses the use of a coolant bath (2) to cool the pressure vessel during filling process (Page 2, paragraph 23) and a compressed gas source (12) not in the cooling bath. The cooling bath is disclosed as liquid nitrogen (Page 1, Paragraph 11) which, at -196 C, results in the pressure vessel being substantially more than 50 degrees C cooler than the compressed-gas source.

In Re claim 11 Kesten discloses the method whereby the pressure vessel is filled with a gas mixture by filling with a previously produced gas mixture (Page 3, claim 1).

In Re claims 12, 13 and 14 Kesten discloses the use of a compressed gas source at 100 bar (Page 1, paragraph 11).

In Re claims 15 and 16 Kesten discloses the use of liquid nitrogen at a temperature of -196 C to cool the pressure vessel (Page 1, paragraph 11). Kesten further discloses the use of a liquid nitrogen heat exchanger to cool the fill gas to -196 C (Page 2, paragraph 27).

In Re claims 19 and 20 Kesten discloses the use of hydrogen as the fill gas (Page 2, paragraph 22). The examiner notes that the boiling temperature of hydrogen at STP is -253 C. Statements of intended use have been considered and determined not to limit the claim beyond the prior art: the Kesten in view of Bastian method is capable of filling airbag gas generators.

3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kesten in view of Bastian as applied to claim 1 above and in further view of Lak et al (US Patent 5,644,920).

In Re claim 17 Kesten in view of Bastian discloses all the limitations, but doesn't disclose the method characterized in that a pressurized refrigerant is used for the cooling, or the temperature is set, controlled or regulated during cooling by the action of pressure. Lak discloses a method whereby the pressure of a cooling bath is lowered in order to depress the boiling point of said bath, in order to control the temperature of the cooling bath. (Column 2, lines 62-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use pressure to control the temperature of the coolant bath in Kesten, as taught by Lak, in order to precisely control the parameters of the filling process.

Response to Arguments

4. Applicant's arguments filed 05/13/2008 have been fully considered but they are not persuasive.

The limitation in question from claim 8 which is now part of claim 1 states "wherein determination and monitoring of a filling quantity during the filling operation are effected manometrically. The examiner notes that manometer is a device for measuring pressure only and that the only variable that can be directly determined manometrically is pressure. Any determination of a quantity requires some transformation of the pressure data into a quantity value. Because such a transformation is not present in the claim or in the supporting passages in the specification the claimed method of

determining a fill quantity manometrically can only be supported by a pressure to quantity transformation that is well known in the art.

The requirement in the applicant's argument that the gas be held above the boiling point in order for gas pressure to reflect fill quantity is already met by the Kesten reference. The examiner notes that the Kesten method uses hydrogen as the fill gas with a boiling temperature of -253 C and liquid nitrogen as the coolant with a temperature of -196 C. Furthermore the Kesten method is specifically disclosed as a method for filling a gas as opposed to a liquid (Page 1, paragraphs 5-7). Therefore, the rejection of claim 8 is maintained: the Bastian reference discloses the measurement of pressure manometrically, the same step disclosed by the instant application. Any transformation of that pressure data into a quantity value necessarily uses a transformation that is commonly known and therefore obvious to one of ordinary skill in the art at the time the invention was made.

Terminal Disclaimer

5. The terminal disclaimer filed on 05/13/2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of co-pending Patent Application No. 10/583,131 has been reviewed and is accepted. The terminal disclaimer has been recorded.

6. The double patenting rejection of the instant application over co-pending Patent Application No. 10/471,926 is hereby withdrawn. The new set of claims are now patentably distinct from the claims in said Patent Application because of the inclusion of the warming step in the new independent claim 1.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON K. NIESZ whose telephone number is (571)270-3920. The examiner can normally be reached on mon-fri 9-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3751

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason K Niesz
Examiner
Art Unit 3751

/Gregory L. Huson/
Supervisory Patent Examiner, Art Unit 3751